

## Claims

1    1. A method for obtaining a set of parameters used for classification comprising the  
2 steps of:

3    (a) receiving a signal at a processing unit;

4    (b) providing at least one basic parameter corresponding to the signal;

5    (c) if present, estimating a noise component of the parameter; and

6    (d) if present, removing the noise component from the parameter.

2. The method of claim 1 further comprising the step of determining whether the  
signal is speech or non-speech.

3. The method of claim 1 further comprising the step of providing at least one  
additional parameter.

4. The method of claim 3 wherein the noise component is present and the step of  
providing at least one additional parameter is in response to the noise component.

5. The method of claim 2 further comprising the step of updating the noise  
parameters if the signal is non-speech.

6. The method of claim 1 wherein the step of providing comprises deriving at least  
one basic parameter corresponding to the signal.

7. The method of claim 1 wherein the step of providing comprises receiving at least  
one basic parameter corresponding to the signal.

1    8. A method for classifying speech comprising the steps of:  
2    (a) receiving a speech-related signal at a processing unit;  
3    (b) providing at least one parameter to be used for classifying the signal;

*Sub A1*

*(A) Amel*

- 4 (c) estimating a noise component of the parameter;
- 5 (d) removing the noise component from the parameter;
- 6 (e) comparing the parameter with a set of at least one threshold; and
- 7 (f) associating the signal with a class in response to the comparing step.

9. The method of claim 8 further comprising the step of determining whether the signal is speech or non-speech.

10. The method of claim 9 further comprising the step of updating a noise component if the signal is non-speech.

*SUB 02*

11. The method of claim 8 wherein at least one parameter is derived to classify the signal.

12. The method of claim 11 wherein a set of basic parameters is derived and at least one noise component parameter.

13. The method of claim 8 wherein said comparing step comprises:

- (a) identifying at least one characteristic of the signal with at least one the parameters;
- (b) setting a flag to indicate the characteristic is present;
- (c) receiving at least one flag in a final decision module; and
- (d) associating a class with at least one flag.

14. The method of claim 8 wherein at least one parameter is received to classify the signal.

1    15. A method for perceptually matching a speech signal in a speech coding device  
2    having at least one process module, the method comprising the steps of:  
3    (a) receiving the signal at the speech coding device;  
4    (b) deriving a plurality of signal parameters in the process module;  
5    (c) weighting the parameters;  
6    (d) associating a particular signal characteristic with the signal parameters;  
7    (e) setting a flag in the process module when the characteristic is identified;  
8    (f) comparing the flags; and  
9    (g) classifying the signal according to one of the comparing step or the deriving step.

16. The method of claim 15 wherein said deriving step comprises deriving a set of basic parameters and deriving a set of noise-related parameters.

17. The method of claim 15 wherein said weighting step comprises:  
(a) estimating a noise component of the parameter in the process modules; and  
(b) removing the noise component of the parameter in the process module.  
18. The method of claim 17 wherein said weighting step comprises a set of noise estimation equations.

19. A method for speech coding whereby a set of homogeneous parameters is provided for classifying a signal, the set of parameters being uninfluenced by a background noise.

1    20. A method for speech communication whereby influence from speech-related  
2    noise is reduced, the method comprising the steps of:  
3    (a) receiving a digital speech-related signal at a speech processing device;

*(a3)  
cont*

- 4 (b) forming a set of homogenous parameters;
- 5 (c) comparing the parameters with a threshold; and
- 6 (d) classifying the signal.

21. The method of claim 20, wherein the forming step comprises forming a set of "noise-free" parameters.

*Sub  
A4*

22. The method of claim 21, wherein the forming step comprises:

- (b1) estimating a noise component; and
- (b2) removing the noise component.

23. The method of claim 20, wherein the comparing step is with a set of thresholds.

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